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MOORTHY, ARAVIND K	
ART UNIT	**PAPER NUMBER**
2131	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/014,664	BRUWER, FREDERICK JOHANNES	
	Examiner	Art Unit	
	Aravind K. Moorthy	2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *25-37 and 39-63* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *25-37 and 39-63* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This is in response to the amendment filed on 22 January 2007.

2. Claims 25-37 and 39-63 are pending in the application.

3. Claims 25-37 and 39-63 have been rejected.

4. Claims 1-24 and 38 have been cancelled.

Response to Amendment

5. The examiner approves of the amendment made to the specification. The examiner withdraws the rejection under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

Response to Arguments

6. Applicant's arguments filed 22 January 2007 have been fully considered but they are not persuasive.

On page 13, the applicant argues that the codes employed in the Farris system have nothing to do with timer values.

The examiner respectfully disagrees. The examiner refers the applicant to FIGS. 8A through 8F and, in particular, to FIG. 8A, the operation of the receiver is set forth therein. In a step 700, an interrupt is detected and acted upon from the radio input pin. The time difference between the last edge is determined and the radio inactive timer is cleared in step 702. A determination is made as to whether this is an active time or inactive time in a step 704, i.e., whether the signal is being sent with carrier or not. If it is an inactive time, indicating the absence of carrier, control is transferred to a step 706 to store the inactive time in the memory and the routine is exited in a step 708. In the event that it is an active time, the active time is stored in

memory in a step 710 and the bit center is tested in a step 712. If the bit counter zero, control is transferred to a step 714, as may best be seen in FIG. 8B and a test is made to determine whether the inactive time is between 20 milliseconds and 55 milliseconds. If it is not, the bit counter is cleared as well as the rolling code register and the fixed code register in step 716 and the routine is exited in step 718.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 25-30, 34-37 and 39-60 are rejected under 35 U.S.C. 102(b) as being anticipated by Farris et al U.S. Patent No. 6,154,544.

As to claim 25, Farris et al discloses a method of securely transferring data from an encoder to a decoder, the encoder including an encoder timer and the decoder including a decoder timer, the method including the steps of:

(a) during a learning process receiving a value of the encoder timer at the decoder and determining a mathematical difference value between the value of the encoder timer and a value of the decoder timer [column 3 line 1 to column 4 line 34];

(b) storing the mathematical difference value as a timer relationship value in the decoder [column 3 line 1 to column 4 line 34];

(c) at the encoder encrypting a data word to form a transmission word, the data word including information identifying a present value of the encoder timer [column 3 line 1 to column 4 line 34];

(d) transmitting the transmission word to the decoder [column 3 line 1 to column 4 line 34];

(e) at the decoder decrypting the transmission word [column 3 line 1 to column 4 line 34]; and

(f) determining a mathematical difference value between the present encoder timer value and a present decoder timer value [column 3 line 1 to column 4 line 34]; and

(g) validating the transmission word by comparing the mathematical difference value between the present encoder timer and the present decoder timer value with the timer relationship value stored in the decoder [column 3 line 1 to column 4 line 34].

As to claim 26, Farris et al discloses that the timer relationship value in the decoder is updated upon receipt of a valid transmission word to remove any discrepancies in the relationship between the encoder timer, decoder timer and the timer relationship value, without affecting the decoder timer [column 8 line 57 to column 9 line 26].

As to claim 27, Farris et al discloses that the updating of the timer relationship value is only done when necessary [column 8 line 57 to column 9 line 26].

As to claim 28, Farris et al discloses that the data word additionally includes at least one of the following: identity information pertaining to the encoder: command information; utility information; cold boot counter information; fixed code information; encoder power supply information and user derived information [column 6, lines 18-50].

As to claim 29, Farris et al discloses that the user derived information is variable via one or more inputs to the encoder and is not known to a manufacturer of the encoder [column 7, lines 1-26].

As to claim 30, Farris et al discloses that the transmission word includes the encrypted data word and at least one of the following: a cold boot counter value; command information; and identity information pertaining to the encoder [column 6, lines 18-50].

As to claim 34, Farris et al discloses the step of forming a plurality of transmission words. Farris et al discloses each transmission word being different from the other transmission words and being based at least on respective encoder high speed timer information, in response to a single activation of the encoder [column 8, lines 28-56].

As to claim 35, Farris et al discloses the step of forming only a single transmission word to be transmitted at least once in response to a single activation of the encoder [column 8, lines 28-56].

As to claim 36, Farris et al discloses the steps, during a learn mode, of storing learning information at the decoder which is transferred from the encoder, and deriving a key from the stored information [column 3 line 1 to column 4 line 34].

As to claim 37, Farris et al discloses that the learning information is stored in a first-in-first-out structure [column 3 line 1 to column 4 line 34].

As to claim 39, Farris et al discloses that multiple encoders are used with a single decoder comprising a single timer and multiple timer relationship values and wherein the various timer relationship values are determined, one for each encoder during its respective learning process [column 3 line 1 to column 4 line 34].

As to claim 40, Farris et al discloses the step of ensuring that the encoder timer at its slowest variance is faster than the decoder timer at its fastest variance [column 8, lines 48-56].

As to claim 41, Farris et al discloses that if the decoder timer lies within a predetermined window when a valid transmission word is received, the decoder timer is re-synchronised with the encoder timer by automatically adjusting the timer relationship value to remove any discrepancies in the relationship between the timers and the timer relationship value [column 8, lines 28-56].

As to claim 42, Farris et al discloses that the re-synchronization is effected by a bi-directional transfer of data between the encoder and decoder [column 3 line 1 to column 4 line 34].

As to claim 43, Farris et al discloses that the timer relationship value or a window is adjusted in size to compensate for drift between the encoder timer and the decoder timer, before validation occurs, such adjustment being based at least on the time period elapsed since the last adjustment of the timer relationship value [column 8 line 57 to column 9 line 48].

As to claim 44, Farris et al discloses that the timer relationship value or a window its adjusted in size to compensate for drift between the encoder timer and the decoder timer, such adjustment being based at least on information about the drift between the encoder timer and the decoder timer determined by analysing at least two successive valid transmissions received with

a period of time elapsed between them and the adjustment being performed before carrying out step (f) on a currently received transmission word [column 8 line 57 to column 9 line 48].

As to claim 45, Farris et al discloses that a window size is assigned to the decoder and the encoder timer is operated to ensure that the encoder timer information does not fall outside the window for a valid transmission of a transmission word in normal operational circumstances [column 3 line 1 to column 4 line 34].

As to claim 46, Farris et al discloses that the timer relationship value is allowed a window when validation of the transmission word occurs and the timer relationship value is adjusted based on knowledge of drift between the encoder timer, the decoder timer and the time period elapsed since a previous valid transmission of a transmission word [column 3 line 1 to column 4 line 34].

As to claim 47, Farris et al discloses that the window size is dynamically adjusted and such adjustment is based on the time period elapsed since the previous adjustment of the timer relationship value [column 8, lines 28-56].

As to claim 48, Farris et al discloses that the window size has a minimum value [column 8, lines 28-56].

As to claim 49, Farris et al discloses that the window size has a maximum value [column 8, lines 28-56].

As to claim 50, Farris et al discloses that the transmission data word also includes a timer value that changes fast so that each transmission word in a sequence of transmission words which are transmitted based on a single continuous activation of the encoder, differs from the other transmission words [column 8, lines 28-56].

As to claim 51, Farris et al discloses that a higher security re-synchronization of the encoder and decoder timers is achieved at least by using the decoder to generate control signals that are used to, directly or indirectly, control the activation of the encoder [column 8, lines 28-56].

As to claim 52, Farris et al discloses an apparatus for transferring data which includes an encoder and a decoder and wherein the encoder includes a timer and an encryption unit for encrypting data which includes timer information from the encoder timer [column 3 line 1 to column 4 line 34], thereby to form a transmission word, and the decoder includes a decoder timer [column 3 line 1 to column 4 line 34], a receiver unit for receiving the encrypted transmission word, a decryption unit for decrypting the received transmission word to extract, at least, the timer information from the encoder, a difference determination unit for determining a mathematical difference value between the encoder timer value and the decoder timer value, and a comparator unit for comparing the mathematical difference value and a timer relationship value stored in the decoder [column 3 line 1 to column 4 line 34], to determine the validity of the transmission word, the timer relationship value being established during a learning process of the encoder and decoder and being representative of a mathematical difference between a value of the encoder timer that is received by the decoder during the learning process and a value of the decoder timer during the learning process [column 3 line 1 to column 4 line 34].

As to claim 53, Farris et al discloses that the apparatus includes a unit for adjusting the timer relationship value when a valid transmission word is received to remove at least one of:

(a) any drift that has occurred [column 8, lines 28-56]; and

(b) any other accumulating discrepancy in the relationship between the encoder timer, decoder timer and the timer relationship value [column 8, lines 28-56].

As to claim 54, Farris et al discloses that the timer relationship value is adjusted before checking the validity of a received transmission word, such adjustment being based at least on a known drift between the encoder timer and the decoder timer as well as the time elapsed since a previous adjustment of the timer relationship value [column 8, lines 28-56].

As to claim 55, Farris et al discloses that the decoder is assigned a window size which determines acceptable drift between the encoder timer and decoder timer for a valid transmission [column 8, lines 28-56].

As to claim 56, Farris et al discloses that the window size is adjusted before checking the validity of a received transmission word, the adjustment being based at least on the time period elapsed since the reception of a previously received valid transmission word [column 3 line 1 to column 4 line 34].

As to claim 57, Farris et al discloses that a re-synchronisation of the encoder and decoder can be achieved by the decoder providing control signals for the encoder inputs [column 3 line 1 to column 4 line 34].

As to claim 58, Farris et al discloses a transmitter which includes an encoder timer and an encryption unit for encrypting data which at least in part is based on timer information from the

encoder timer thereby to form the transmission word, and wherein the encoder timer is permitted to run only for a limited period after each activation of the transmitter [column 3 line 1 to column 4 line 34].

As to claim 59, Farris et al discloses a transmitter which includes an encoder timer and an encryption unit for encrypting data which at least in part is based on timer information from the encoder timer thereby to form the transmission word and wherein, when the encoder timer runs beyond a predetermined limit, the transmitter will upon a single activation transmit more than one transmission value equivalent to the transmitter being activated twice [column 3 line 1 to column 4 line 34].

As to claim 60, Farris et al discloses a decoder which includes a timer, an input to receive the transmission word, a decryption unit to decrypt the transmission word and obtain the transmitted timer information, memory to store the timer relationship value and a comparison unit to compare the transmitted timer information to time information generated by the decoder timer and to the stored timer relationship value, and means, responsive to the comparison unit, to activate an output if certain criteria are met in the comparison [column 3 line 1 to column 4 line 34].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Farris et al, Jr. U.S. Patent No. 5,500,897 as applied to claim 25 above, and further in view of Belt et al U.S. Patent No. 5,446,904.

As to claim 31, Farris et al does not teach that the cold boot counter value, when included in the transmission word, is transmitted in the clear.

Belt et al teaches a cold boot counter value that is transmitted in the clear [column 38, lines 52-64].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Farris et al so that when a cold boot counter value is included in the transmission word that it would have been transmitted in the clear.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Farris et al by the teaching of Asprey because it insures that the time information on the system remains accurate [column 3 line 66 to column 4 line 4].

9. Claims 32, 33 and 61-63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Farris et al, Jr. U.S. Patent No. 5,500,897 as applied to claim 25 above, and further in view of Rysko et al U.S. Patent No. 5,155,729.

As to claims 32, 33 and 61-63, Farris et al does not teach the step of keeping the encoder and decoder in synchronism using a cold boot counter which is changed each time the encoder is powered up or comes out of reset. Farris et al does not teach including a count value of the cold boot counter in the transmission word. Farris et al does not teach that the cold boot counter value, or part thereof, when included in the transmission word, is transmitted in the clear.

Rysko et al teaches a cold boot counter that is changed each time a system is powered up or comes out of reset. Rysko et al teaches including a count value of the cold boot counter in the transmission word. Rysko et al teaches that the cold boot counter value would have been transmitted with the transmission word in the clear [column 6, lines 29-64].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Farris et al so that the encoder and decoder would have been in synchronism using a cold boot counter which would have changed each the time the encoder was powered up or came out of reset. The cold boot counter value would have been included in the transmission word and transmitted in the clear.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified Farris et al by the teaching of Rysko et al because it prevents for endless switchover attempts, i.e. "ping-pong" between redundant processors [column 2, lines 28-41].

Conclusion

10. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aravind K. Moorthy whose telephone number is 571-272-3793. The examiner can normally be reached on Monday-Friday, 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R. Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Aravind K Moorthy
April 29, 2007

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